

CLAIMS

What is claimed is:

- 5 1. A gauge for indicating a level of a liquid in a tank, comprising:
 - a display device comprising a plurality of light-emitting elements;
 - a control unit coupled to the display device and to receive a reset signal indicative of a full level of the liquid in the tank and a liquid level signal indicative of the level of the liquid in the tank; and
- 10 wherein the control unit is configured to respond to the reset signal by performing a calibration routine, to measure a magnitude of the liquid level signal, and to activate a number of the light-emitting elements of the display device dependent upon the magnitude of the liquid level signal.

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2. The gauge as recited in claim 1, wherein when performing the calibration routine, the control unit measures a first magnitude of the liquid level signal, equates the first magnitude of the liquid level signal to a full tank level, and divides a range between the full tank level and a low warning level into a plurality of equally-sized divisions.

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3. The gauge as recited in claim 2, wherein following the calibration routine the control unit measures a second magnitude of the liquid level signal and activates the number of the light-emitting elements of the display device dependent upon a particular one of the divisions in which the second magnitude exists.

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4. The gauge as recited in claim 1, further comprising reset means for producing the reset signal when activated.

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5. The gauge as recited in claim 4, wherein the reset means comprises a momentary pushbutton switch.

6. The gauge as recited in claim 1, further comprising light sensing means for producing a signal indicative of an ambient light level.

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7. The gauge as recited in claim 6, wherein the control unit is coupled to receive the signal from the light sensing means and configured to vary a duty cycle of an activating signal to each of the light-emitting elements of the display device dependent upon the signal from the light sensing means.

8. The gauge as recited in claim 6, wherein the light sensing means comprises a phototransistor.

9. The gauge as recited in claim 1, further comprising a housing and a cap portion attached to the
5 housing, wherein the display device and the control unit are positioned within the housing.

10. The gauge as recited in claim 9, further comprising conveying means for conveying light emitted
by each of the light-emitting elements of the display device through an outer side surface of the cap
portion.

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11. The gauge as recited in claim 10, wherein the conveying means comprises an array of light
pipes.

12. A gauge for indicating a level of a liquid in a tank, comprising:

a display device comprising a plurality of light-emitting elements;
a control unit coupled to the display device and to receive a liquid level signal indicative of
the level of the liquid in the tank, wherein the control unit is configured to measure a
5 magnitude of the liquid level signal and to activate a number of the light-emitting
elements of the display device dependent upon the magnitude of the liquid level
elements of the display device dependent upon the magnitude of the liquid level
signal;
a housing and a cap portion attached to the housing, wherein the display device and the
control unit are positioned within the housing; and
10 conveying means for conveying light emitted by each of the light-emitting elements of the
display device through an outer side surface of the cap portion.

13. The gauge as recited in claim 12, wherein the conveying means comprises an array of light pipes.

14. The gauge as recited in claim 12, further comprising light sensing means for producing a signal
5 indicative of an ambient light level.

15. The gauge as recited in claim 14, wherein the control unit is coupled to receive the signal from
the light sensing means and configured to vary a duty cycle of an activating signal to each of the
light-emitting elements of the display device dependent upon the signal from the light sensing
10 means.

16. The liquid level gauge as recited in claim 14, wherein the light sensing means comprises a
phototransistor.

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17. A method for indicating a level of a liquid in a tank, comprising:

providing a display device comprising a plurality of light-emitting elements;

receiving a reset signal indicative of a full level of the liquid in the tank;

5 performing a calibration routine in response to the reset signal, wherein during the

calibration routine a first magnitude of a liquid level signal indicative of the level of

the liquid in the tank is measured and a result is produced;

measuring a second magnitude of the liquid level signal; and

activating a number of the light-emitting elements of the display device dependent upon the

second magnitude of the liquid level signal and the result of the calibration routine.

18. The method as recited in claim 17, wherein the calibration routine comprises:

measuring the first magnitude of the liquid level signal;

equating the first magnitude of the liquid level signal to a full tank level; and

dividing a range between the full tank level and a low warning level into a plurality of

equally-sized divisions.

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19. The method as recited in claim 18, wherein the activating comprises:

activating a number of the light-emitting elements of the display device dependent upon a

particular one of the divisions in which the second magnitude exists.

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